

OVERVIEW OF THE U.S. BUILDING CODE REGULATION PROCESS

**NIST Standards in Trade Workshop
on Concrete and Cement**

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Representing the U.S. Code and
Standard Developing Organizations

SUBJECT

A faint, black outline map of the continents of North and South America is positioned in the background, centered behind the text.

- ⇒ **Problems and solutions,**
- ⇒ **Development,**
- ⇒ **Implementation, and**
- ⇒ **Delicate Balance**

*...related with the regulation process
for Building Codes and Standards in
the U.S.*

It's a constant effort to:

**Reduce the vulnerability of the
built environment mitigating
risks to:**

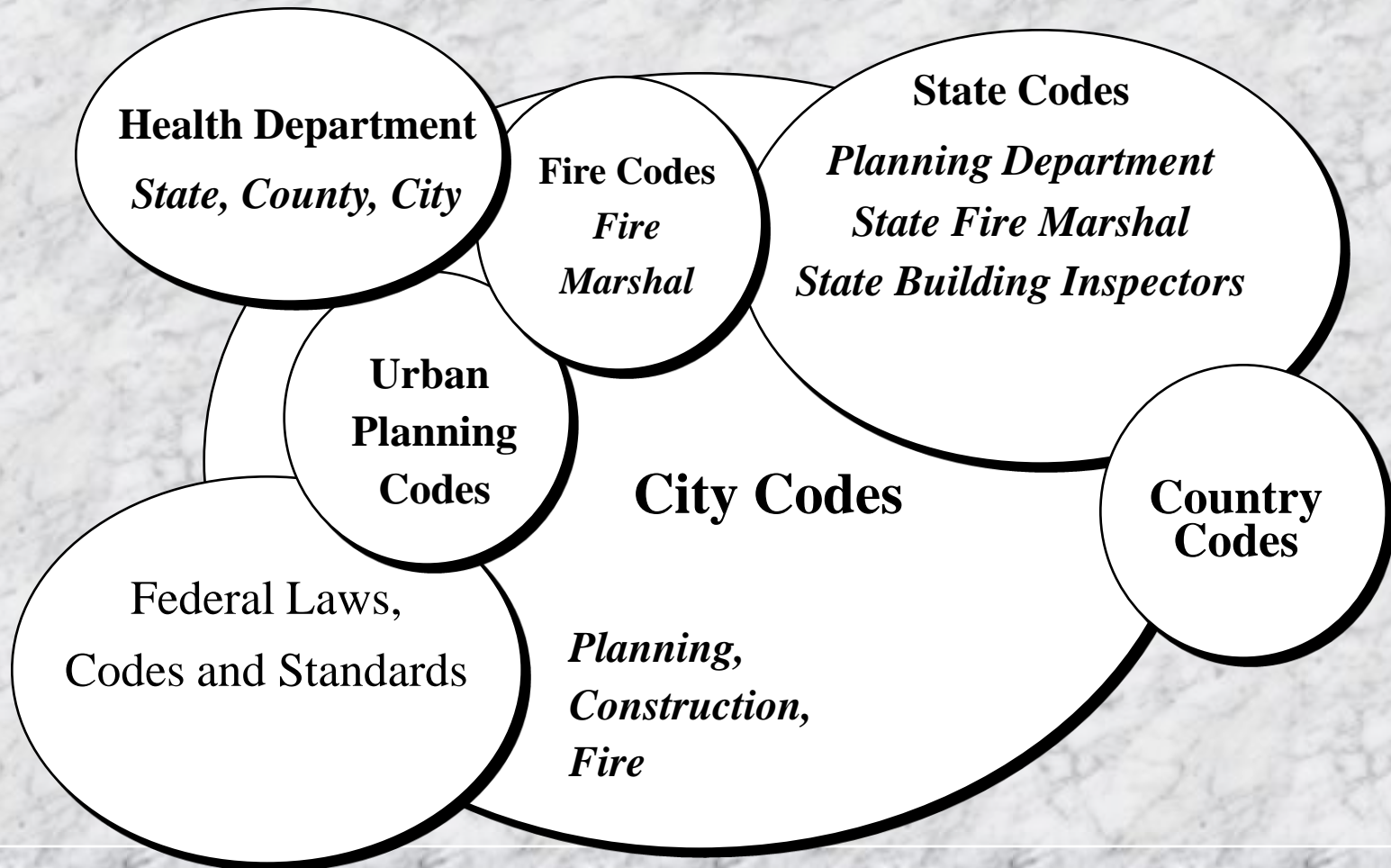
- Improve life safety of our citizens,
- Increase the quality of construction in the built environment, and perhaps...
- Help to ensure the financial investment.

USA - At the beginning of the last century:

Jurisdictions and Governmental entities created their own building codes and standards.

- **Lack of uniformity,**
- **Minimum participation,**
- **Antiquated codes and standards,**
- **Need for clarifications,**
- **Lack of financing,**
- **Lack of training and**
- **Lack of certification.**

...work towards the **ELIMINATION OF CONFLICTS**



Organizations started to be formed

- **ASCE (1852)**
- **ASME (1880)**
- **NFPA (1896)**
- **ASTM (1898)**
- **NIST (1901)**
- **ACI (1904)**
- **ANSI (1914)**
- **ICC 1994** (*BOCA 1915, ICBO 1922, and SBCCI 1941*)

Objectives Building Codes and Standards

- **Life safety of occupants,**
- **Protection of Fire Fighters,**
- **Property protection,**
- **Continuity of operations,**
- **Protection of the environment,**
- **Quality assurance,**
- **Others...**

DEVELOPMENT OF **THE U.S. CODES &** **STANDARDS**



ASTM's System

- Technical committees meet twice annually (task groups may meet more frequently)
 - Focus is on the review of technical standards and the input resulting from ballots of new or revised standards
- Standards development and evaluation is continuous
- All stakeholders participate (government, industry, consumers, academia)
 - Anyone, regardless of membership, may vote
- Technical experts determine the standards to be developed and the technical content of the standards
 - Reflect market sector needs and technology

ACI's System

- ACI's focus is on concrete technology, design, construction, and repair.
- Technical committees meet twice a year, with correspondence between meetings.
- Committees produce consensus reports, guides, and standards within their mission.
- All documents produced by committees are reviewed for technical content by the Technical Activities Committee.

NFPA's System

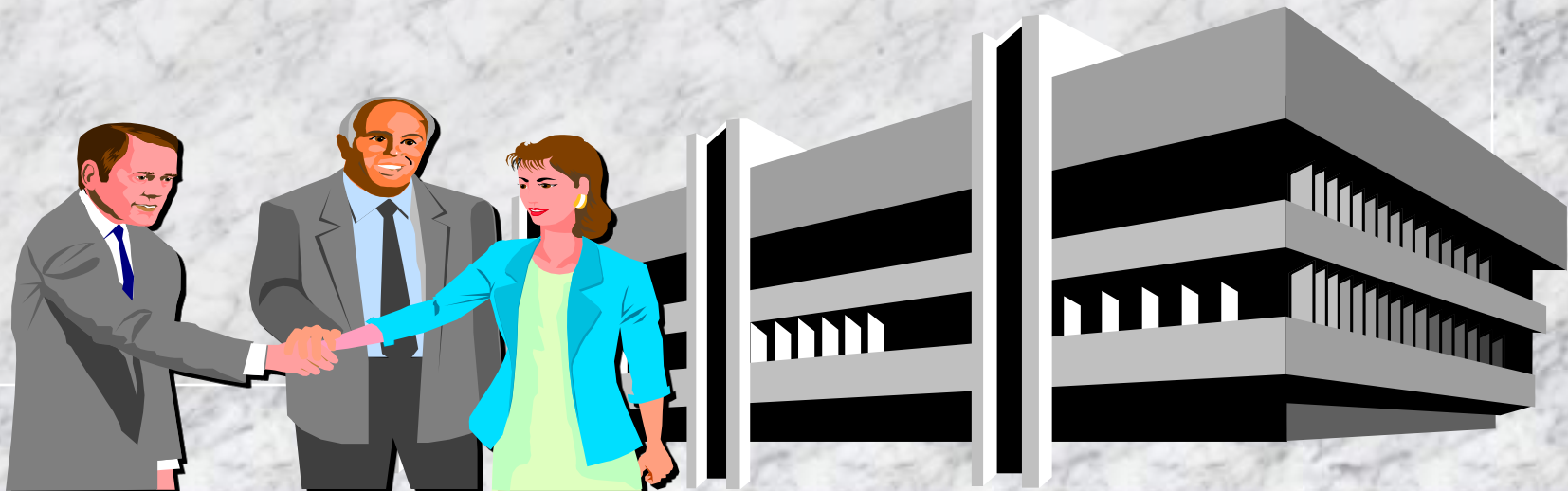
- Anyone can submit and debate modifications.
 - Anyone can submit proposals and comments,
 - Anyone can attend technical committee meetings,
 - Anyone can debate issues at the Association Meetings.
- Multiple opportunities to participate in the steps of process
 - Report on Proposals ➡ Report on Comments ➡ Association Membership Meeting ➡ Standards Council Issuance.
- New editions of all documents are issued every 3 to 5 years.
- All NFPA documents are ANSI accredited (by American National Standards Institute)

ICC's system

- **TWO PUBLIC HEARINGS (18 months)**
 - Proposals for Modifications (1st Round)
 - Challenge Process (2nd Round)
- Continuous process,
- Any interested party can submit and debate the modifications,
- Because it is the collective know-how that improves public safety.

IMPLEMENTATION

- **Modification and Adaptation,**
- **Adoption Process, and**
- **Application.**



MODIFICATION & ADAPTATION

Model Codes & Standards



Modify & adapt to meet local or national conditions



Through the collective participation, the model codes & standards try to collect the most common geographic, geological, topographic, climatic, social, and technical conditions. The process of adaptation & modification consists in taking the documents and making the necessary changes to be able to implement them to the regional conditions previously mentioned.

ADOPTION PROCESS

1. Once the modification and adaptation process is completed the codes & standards are considered for adoption.
2. Though a Municipal, County, Provincial, State or National legislation or ordinance.
3. There may or may not be public debate.
4. It is signed into law.

APPLICATION

- Training seminar programs,
- Professional Certification programs,
- Product and Systems Evaluation,
- Laboratory Accreditation programs,
- Technical Consultation,
- Creating Chapters,
- Training videos, and
- Support to jurisdictions in the adaptation and adoption process.

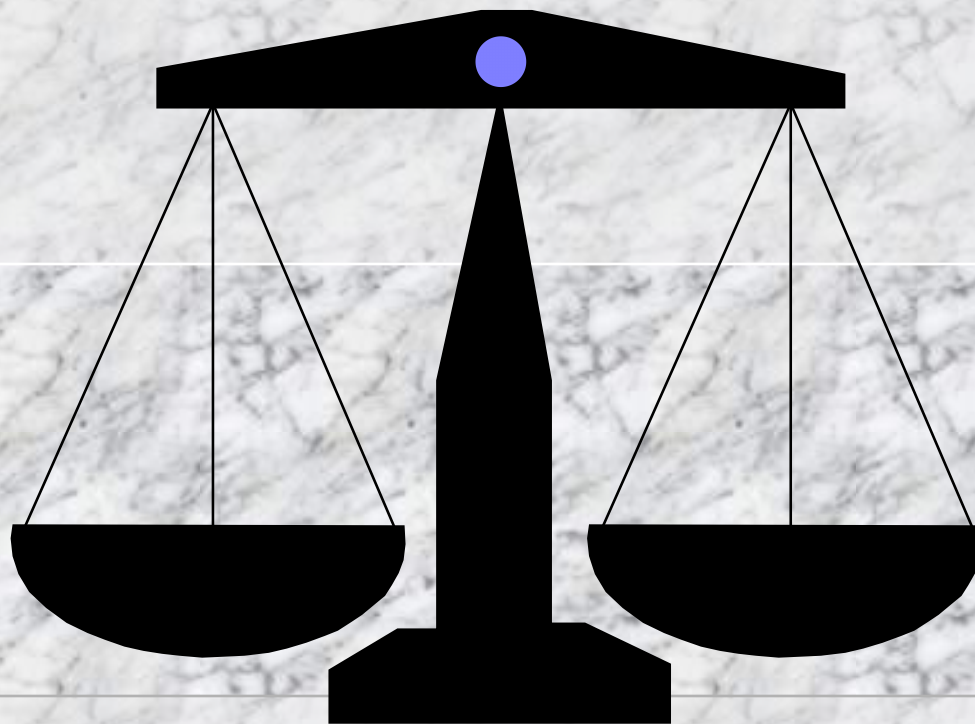
With respect to **FINANCIAL**
aspects...field application to:

- Optimize the resources of jurisdictions.
- Increase the reliability of construction projects in the eyes of **LOCAL AND INTERNATIONAL FINANCIAL INSTITUTIONS**
- Encourage construction projects in jurisdictions.

FINANCIAL aspects (*continues*)

- Open new international markets,
- Promote imports and exports of construction products and services,
- Transfer of updated technology,
- Work to obtain savings on the costs of property insurance,
- Increase property value, and
- Perhaps decrease the unemployment rate.

DELICATE BALANCE



**NEED TO
ACHIEVE A
DELICATE
BALANCE**

Plancheck

Inspections

**MUNICIPAL
INTERPHASE**

Public Safety

**BUILDING
CODES &
STANDARDS**

Education

Construction

**ACADEMIC
INTERPHASE**

**COMMECIAL
INTERPHASE**

Students/Professors

Research

Design/Research

Costs

If the Balance is broken we have:

- Non-code complying Buildings,
- Unsafe structures,
- Bad construction quality,
- Materials used incorrectly,
- Materials that have not been properly tested or certified, and
- Propagation of non-ethical builders.

**And thus, we come to the conclusion
that we must reduce the**

**VULNERABILITY OF THE
BUILT ENVIRONMENT**

■ INCREASING:

- LIFE SAFETY
- CONSTRUCTION QUALITY, AND
- THE FINANCIAL ASPECT.

Benefits in working together:

- ✎ Unification of building codes to facilitate the transfer of technology and know-how,
- ✎ Promote the investments, in our countries, of industries that manufacture products internationally certified, and
- ✎ Establishing a professional certification program that will improve the quality of professionals and the services they provide.

Benefits in Working Together *(continues)*

- Construction reliability would increase in the eyes of international institutions, banks, and investors,
- Accreditation of laboratories,
- Work with Universities,
- Facilitate the certification of construction products and systems, and
- Others.

CONCLUSION

- Problems,
- Development,
- Implementation, and
- Delicate Balance

*related with the
regulation process for
Building Codes and
Standards in the U.S.*

**Thank you
very much!!!**



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